

# NANOSTRUCTURED TITANIA COATED TITANIUM

## Abstract of Disclosure

A ball valve for use in the pressure acid leaching of nickel ores is disclosed. The valve has a valve body and a ball centrally positioned in the valve body, which has a central passage rotatable in the valve body between open and closed positions. At least one seat is disposed between the ball and the valve body. The ball and seat each comprise a titanium substrate and an ultrafine or nanostructured titania coating. The titania can include from 5 to 45 volume percent of a second phase material that is immiscible with the titania and exhibits corrosion resistance.